REMARKS

Claims 1-12 are pending and under consideration in the above-identified application. In the Final Office Action dated September 15, 2008, the Examiner rejected claims 1-12.

With this Amendment, claims 1, 8 and 10-12 were amended. No new matter has been introduced as a result of the amendments.

I. 35 U.S.C. § 102 Anticipation Rejection of Claims

Claims 1, 3-5 and 9-11 were rejected under 35 U.S.C. § 102(e) as being anticipated by Amey, Jr. et al. (U.S. Patent No. 6,409,567). Applicant respectfully traverses this rejection.

The claims require a field electron emission film that is made of an ink that is coated and sintered on the cathode or electrode substrate such that the heat-decomposable metal compound is decomposed to a heat composition product. The heat decomposition product has adhesive properties imparted by the sintering. Specification, Page 9. As such, the field electron emission film is adhesive, dense and has less residual gas content. *Id.*

The Examiner stated that product-by-process limitation in the claims is not afforded patentable weight. However, a product-by-process claim is in fact patentable when the process steps impart distinctive structural characteristics to the final product. *In re Garnero,* 412 F.2d 276, 279 (CCPA 1979). In this case, the sintering process imparts a distinctive structural characteristic on the final product. Namely, a field electron emission film that has adhesive properties and less residual gas content. As discussed in the Specification, the conventional film techniques do not create a film with the same characteristics required by the claims. Specification, Pages 5-7.

The claims also require a surface roughness of 1500 nm or less. As evidenced by the data in Tables 1 and 2, the present invention requires a surface roughness that is smoother than conventional field electron films. Specification, Page 40 & Tables 1& 2.

Amey Jr. et al. teaches a field electron emission film comprising an ink, a carbon nanotube and a heat-decomposable metal compound dispersed therein. Amey Jr. et al., Col. 4, lines 60-65; col. 7, lines 10-40. However, Amey Jr. et al. also teaches a firing step that volatizes the organic materials in the film leaving a composite layer made of graphite particles and glass. *Id.* at Col. 7, lines 56-58. Additionally, Amey Jr. et al. fails to teach or even fairly suggest a field electron emission film that has adhesive properties, less residual gas content and a surface roughness of 1500 nm or less. As such, Amey Jr. et al. fails to teach or even fairly suggest all the requirements of independent claims 1, 10 and 11. As such, independent claims 1, 10 and 11 are patentable over the cited reference as are dependent claims 3-5 and 9 for at least the same reasons. Accordingly, Applicants respectfully request that the above rejection be withdrawn.

II. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Amey Jr. et al. in view of Saito et al. (U.S. Publication No. 2002 0031465). Applicant respectfully traverses this rejection.

Saito et al. teaches a field electron emission film made of a carbon nanotube structural body and a heat decomposition compound. Saito et al. does not, however teach or even fairly suggest a field electron emission film including an ink that is coated and sintered on a surface resulting in a field electron emission film having a heat composition product that is adhesive. Furthermore, Saito et al. does not teach or even fairly suggest a field electron emission film with a surface roughness of 1500 nm or less.

As discussed above, Amey Jr. et al. also fails to teach or even fairly suggest a field electron emission film that has adhesive properties, less residual gas content and a surface roughness of 1500 nm or less. As such, the cited references taken singularly or in combination

with each other, fail to teach or suggest all the limitations of claim 6. Accordingly, Applicant respectfully requests that the above rejection be withdrawn.

Claims 7-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Amey Jr. et al. in view of Kajiwara et al. (U.S. Publication No. 2003 0102797). Applicant respectfully traverses this rejection.

Kajiwara et al. teaches a plurality of metals that includes Sn and In in field emission devices. Kajiwara, et al. Table 2. Kajiwara et al. does not, however, teach or even fairly suggest using a plurality of metals that includes Sn and In in a field emission film as required by the claims. Furthermore, Kajiwara et al. does not teach or even fairly suggest a field emission film that has a surface roughness of 1500 nm or less.

As discussed above, Amey Jr. et al. does not teach or even fairly suggest a field emission film that has adhesive properties, less residual gas content and a surface roughness of 1500 nm or less. As such, taken singularly or in combination with each other, the cited references fail to either teach or even suggest all the required elements of claims 7 and. 8.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Amey Jr. et al. Applicant respectfully traverses this rejection.

Claim 12 requires require a field electron emission film that is made of an ink that is coated and sintered on the cathode or electrode substrate such that the heat-decomposable metal compound is decomposed to a heat composition product. Claim 12 also requires a field electron emission film that has a surface roughness of 1500 nm or less.

As discussed above, the product-by-process claim should be given patentable weight because the sintering process imparts a distinctive structural characteristic on the final product. Namely, a field electron emission film that has adhesive properties and less residual gas content.

Amey Jr. et al. teaches a field electron emission film comprising an ink, a carbon nanotube and a heat-decomposable metal compound dispersed therein. Amey Jr. et al., Col. 4, lines 60-65; col. 7, lines 10-40. However, Amey Jr. et al. also teaches a firing step that volatizes the organic materials in the film leaving a composite layer made of graphite particles and glass. *Id.* at Col. 7, lines 56-58. Additionally, Amey Jr. et al. fails to teach or even fairly suggest a field electron emission film that has adhesive properties, less residual gas content and a surface roughness of 1500 nm or less. As such, the cited reference fails to teach or even fairly suggest all the requirements of claim 12. Accordingly, claim 12 is patentable over the cited reference. As such, Applicants respectfully request that the above rejection be withdrawn.

III. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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